# PROJECT DESCRIPTION

# Kalotsa Site Pad Expansion

Hilcorp Alaska, LLC

**Hilcorp Alaska, LLC**
**3800 Centerpoint Drive, Suite 1400**
**Anchorage, AK 99503**

**December 2025**

# Contents

## 1.0 APPLICANT

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## 2.0 PROJECT OVERVIEW

Hilcorp Alaska, LLC (Hilcorp) is proposing to expand the Kalotsa Site gravel pad to support natural gas development in Cook Inlet. The expanded pad will increase by approximately 1.93 acres with an additional 24,604 cubic yards (CY) of gravel placed.

The expanded pad will involve placement of gravel fill abutting existing infrastructure to support natural gas operations in the Ninilchik Unit. 1.82-acres of jurisdictional palustrine emergent wetlands as defined by the U.S. Army Corps of Engineers (USACE) will be directly impacted/lost as a result of this project. Since the project is located in wetlands located above the high tide line of the Cook Inlet, issuance of a USACE Section 404 Individual Permit (IP) is necessary to perform this project. Construction is anticipated to start during the summer of 2026 and will continue through the fall season of 2026 as needed.

Acreage value and percentage of fill increase to the watershed are provided in Table 1. Total acreage listed are final grade estimates. Additional calculations can be found below in Table 4.

**Table 1: Corea Creek – Frontal Cook Inlet Watershed (190203010801)**

| | |
|---|---|
| Total HUC 12 Acreage | 52,983 |
| Proposed Kalotsa Site Pad Gravel Acreage Addition | 1.93 |
| Percent Increase of Total Gravel Acreage in HUC (%) | 0.004% |

The maps and drawings included with this document provide additional details on the project components. No utility services (e.g., water, sewer, electricity, etc.) or permanent camp/lodging facilities are planned for the expansion activities at this time.

## 3.0 PROJECT LOCATION

The Kalotsa Site Pad area is located in Southcentral Alaska, along the west side of the Kenai Peninsula, approximately 5 miles from the census-designated place of Ninilchik and on lands owned by the Ninilchik Native Association. Figures 1-2 of Appendix B show the Kalotsa Site Pad location; location data is also provided in the following table:

**Table 2: Project Location Information**

| Project Name | Latitude | Longitude | MTRS | USGS Quadrangle |
|---|---|---|---|---|
| Kalotsa Site Pad Expansion | 60.103347 N | -151.592454 W | T01S R13W S07 Seward Meridian | Kenai A-5 |

## 4.0 PROJECT PURPOSE AND NEED

The purpose of the project is to expand the available working area to support natural gas development operations. The pad construction will support current and future exploration and development activities.

## 5.0 DEVELOPMENT SCHEDULE

The proposed schedule developed by Hilcorp is highly dependent on obtaining necessary permit authorizations, weather, and associated factors of gravel mining, movement, and placement. Gravel will be sourced from a local existing material site that is in close proximity to the existing road system and trucked to the proposed work site. The gravel is proposed to be placed in the summer of 2026. Gravel will be placed from the existing pad to minimize impacts to area wetlands.

In summary, the development schedule is as follows:

- Winter 2025: Obtain permit authorization and conduct final survey activities for project components
- Summer 2026: Gravel haul and placement

- Fall 2026: Re-work gravel and complete proposed project

## 6.0 PROJECT COMPONENTS

The Kalotsa Site Pad expansion will require the fill of 1.82-acres of Waters of the U.S. The location and design are shown in Figures 1-4 below. The pad expansion will be constructed with a minimum gravel fill to match grade of the existing Kalotsa Pad, using 2V:1H side slopes to reduce the fill footprint to the minimum necessary to accomplish the purpose and need. The total 1.93-acre pad will involve 24,604 cubic yards of gravel fill material.

### 6.1 Material Site

The material is currently available; therefore, the project will not involve the development of a new material source. The gravel fill required for construction of the pad expansion will be obtained from an already permitted source.

## 7.0 CONTINGENCY PLANS

Hilcorp has a Spill Prevention, Control and Counter-measure Plan (SPCC). The SPCC plan complies with federal EPA regulations set forth in 40 Code of Federal Regulations (CFR) Part 112. This plan documents Hilcorp's abilities and procedures to prevent oil and hazardous materials spills. It also documents response actions in the event of a spill of oil and/or hazardous materials.

## 8.0 WILDLIFE ACCESS

The Kalotsa Site Pad will not result in any barriers to wildlife access or movement other than the physical presence of the pad gravel. Hilcorp has an existing Wildlife Avoidance and Interaction Plan that will be utilized for construction and future activities as necessary. This plan can be provided upon request.

A desktop analysis for endangered species was performed; no species are believed to be present in the project area.

## 9.0 AIR EMISSIONS

Air emissions from the equipment used for the construction of the pad expansion are characterized as non-point mobile sources. No specific construction or operating air permits are required from the Alaska Department of Environmental Conservation. The equipment slated for use for the pad expansion includes bulldozers, loaders, gravel haul trucks, light duty vehicles, a compactor, and other similar emission sources. These emission sources are standard equipment that has been used on numerous other construction projects in the past.

## 10.0 ADDITIONAL ENVIRONMENTAL INFORMATION

The wetlands habitat in the project area has been classified by United States Fish and Wildlife Service National Wetland Inventory as a palustrine emergent wetland. These are non-tidal

wetlands dominated by persistent vegetation that is present through most of the growing season. Figure 4 shows the type and extent of current wetlands mapped at the project site.

Just outside of the project area is an unnamed, but previously mapped riverine system that appears to be connected to the palustrine emergent wetlands mentioned above through the semi-permanently flooded hydrologic modifier.

**Table 3. Key Permits, Approvals, and Other Potential Requirements for the Project**

| Agency | Permits, Approvals, and Other Requirements |
|---|---|
| Federal Agencies | |
| United States Army Corps of Engineers | • Clean Water Act Section 404 Individual Permit |
| Local Agencies | |
| Ninilchik Native Association Inc. | • Notice of Development |

# 11.0 APPLICANT MITIGATION STATEMENT

## 11.1 Avoidance

The entire project area contains jurisdictional waters of the United States; therefore, complete avoidance is not practicable. Hilcorp proposes to include the following practicable avoidance measures:

- Project limits will be delineated with silt fencing or similar material to avoid impacts outside the proposed pad area
- Work will occur from the existing pad surface to avoid additional temporary impacts to Waters of the U.S.

## 11.2 Minimization

Hilcorp will incorporate the following minimization measures into project design and construction to reduce overall impacts on Waters of the United States:

- The pad will be constructed with a minimum 2V:1H side slopes to minimize fill area and impacts to wetlands
- Regular pad surface watering will occur during operation to minimize fugitive dust deposition to the area
- Existing gravel sources will be used

## 11.3 Compensatory Mitigation

Hilcorp evaluated the unavoidable fill proposed for the Kalotsa Site Pad Expansion project using the USACE Alaska District's Mitigation "Thought Process" document, which provides a

crosswalk from the implementing regulations provided in 33 CFR Part 320.4(r)(2) to Alaska District internal guidance regarding the need for compensatory mitigation. In the "Thought Process", the Alaska District identifies six instances where compensatory mitigation may be required when:

1. The project occurs in rare, difficult to replace or threatened wetlands, or areas of designated Critical Habitat (i.e., Cook Inlet Beluga whale designated critical habitat).
2. The project impacts more than 1/10th acre of wetlands and/or other waters of the United States or 300-linear feet of stream, AND the watershed condition is such that compensatory mitigation is necessary to offset the project's unavoidable effects. Situations that can indicate degradation of the watershed's aquatic environment can include, but are not limited to, waters listed as impaired, or Clean Water Act Section 203(d) listed waterbodies, identification in a watershed management plan, impervious surface cover, developed land use, etc.
3. Fill is placed in intertidal waters associated with special aquatic sites
4. Fill is placed in fish bearing waters and jurisdictional wetlands within 500-feet of such waters when impacts are determined to be more than minimal
5. The project is federally funded, so compensatory mitigation is required under Executive Order 11990 to meet the National policy of no net loss of wetlands; and
6. Large-scale projects with adverse aquatic resource impacts (e.g., mining development, highway, airport, pipeline, and railroad construction projects [33 CFR 320.4(r)(2)] (i.e., bridge that results in substantial loss of intertidal habitat).

Hilcorp performed the Thought Process using the maximum estimated footprint for all project features. Hilcorp's response to each of the above six items are shown below:

1. The project is not located in rare, difficult to replace, or threatened wetlands or areas of designated Critical Habitat.
2. The project does impact greater than 1/10th acre of wetlands. However, the single watershed in which the proposed project is located is not significantly deteriorated. Additional information on that aspect is provided below.
3. The project does not impact intertidal waters associated with special aquatic sites.
4. According to the Alaska Department of Fish & Game's Alaska Fish Resource Monitor fill placement would be greater than 500-feet from the nearest point of Ninilchik River, which is a fish-bearing anadromous water.
5. The project is not federally funded.
6. The project is not a large-scale project with adverse aquatic resource impacts. Additional information is provided below.

## Rare, Difficult to Replace or Threatened Wetlands, or Designated Critical Habitat

### Current Watershed Condition and Proposed Impacts

The proposed project will involve placing 1.93-acres of permanent gravel fill in the Corea Creek – Frontal Cook Inlet watershed (HUC Code 190203010801).

As shown below in Table 4, the proposed total permanent fill for the project, combined with existing anthropogenic-based disturbances, would result in a maximum new percent disturbance of 0.944% to the watershed. Hilcorp's proposed project would only contribute an additional 0.004% disturbance to that watershed.

**Table 4: Total Watershed Disturbance**

| Watershed (12-digit HUC) | Total Watershed (Acres) | Existing Disturbance (Acres) | Expanded Kalotsa Site Pad Disturbance (Acres) | Expanded Kalotsa Site Pad Disturbance (%) | Total Disturbance (%) |
|---|---|---|---|---|---|
| Corea Creek – Frontal Cook Inlet Watershed (190203010801) | 52,983 | 500 | 1.93 | 0.004% | 0.944 |

### Project Scale and Impact Severity

As shown above in Table 4, constructing the project will result in 0.944% total disturbance in the watershed, including existing disturbance. Hilcorp has incorporated several project design features and adopted avoidance and minimization measures into the project to avoid adverse aquatic resource impacts, while still meeting the overall project purpose and need. The avoidance and minimization in combination with the size of the overall watersheds and number of wetlands in those watersheds will result in minor overall impacts to aquatic resources.

Based on the above results of applying the Thought Process, combined with the project's proposed avoidance and minimization measures, additional compensatory mitigation for the 1.82-acres of jurisdictional wetlands does not appear necessary. Therefore, Hilcorp is not proposing additional compensatory mitigation. If the USACE determines compensatory mitigation is necessary, Hilcorp will work with USACE to identify a practicable compensatory mitigation solution.

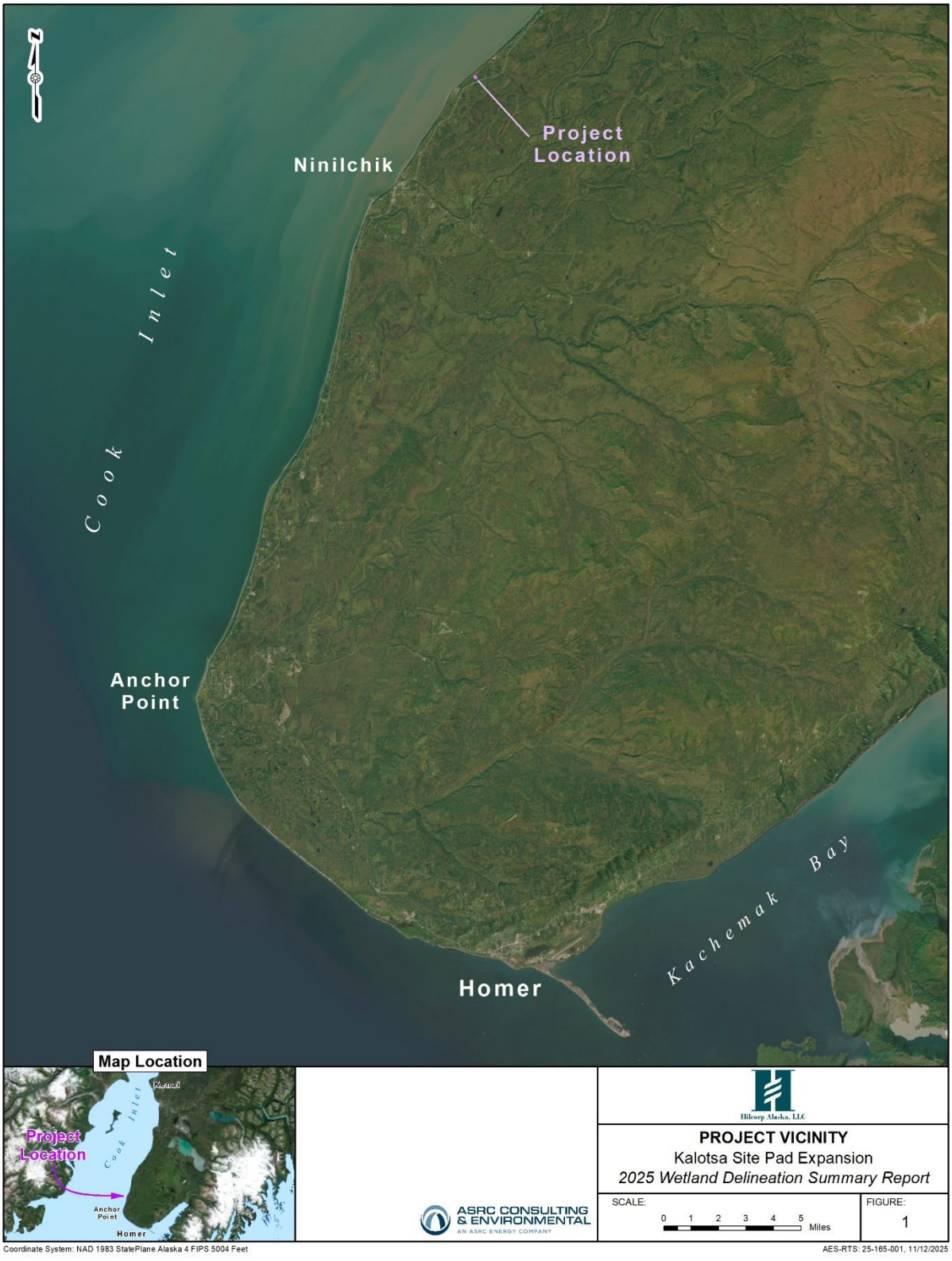
# Attachment A: Site Photographs

## Site Photographs

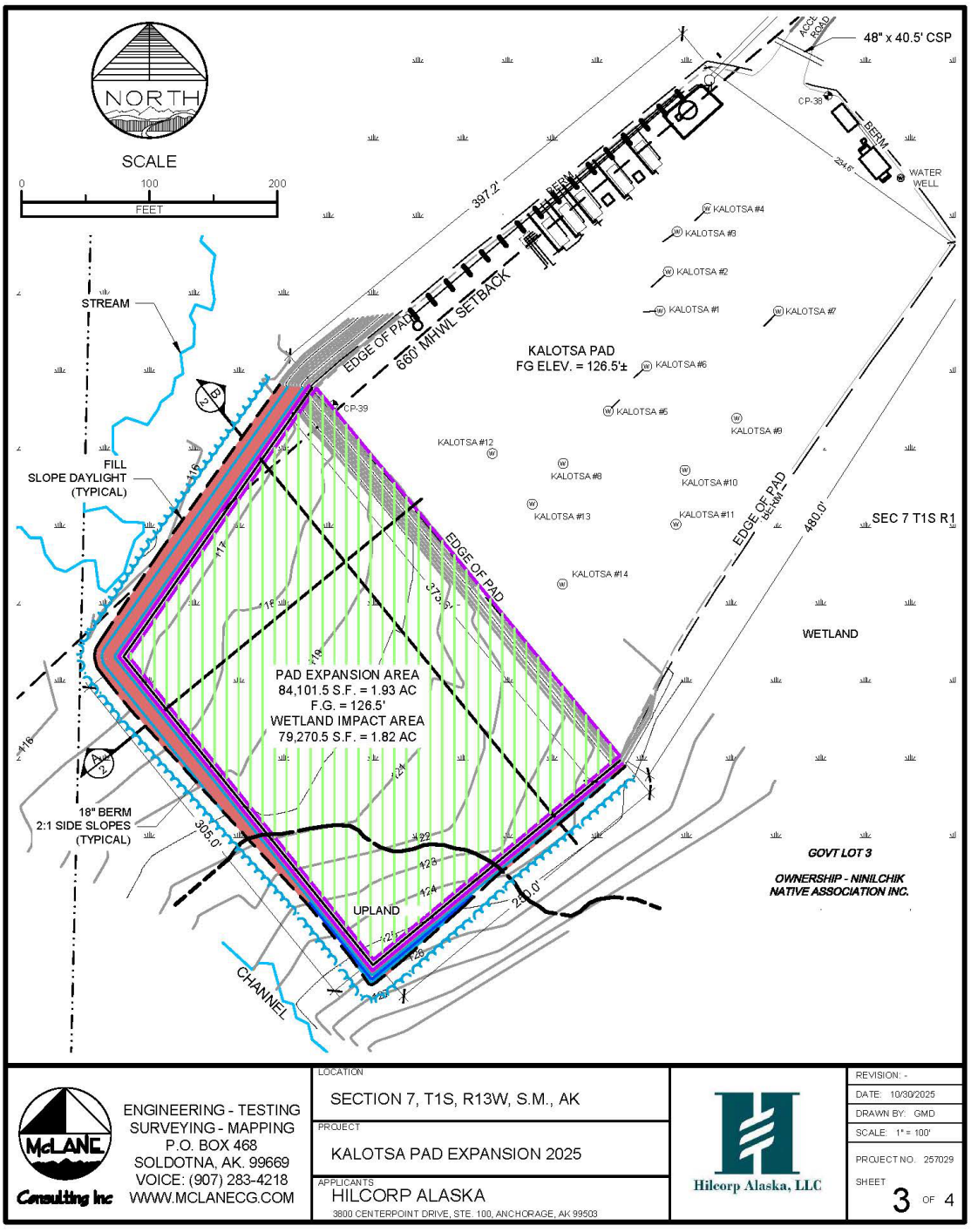
## Site Photographs

# Attachment B: Figures

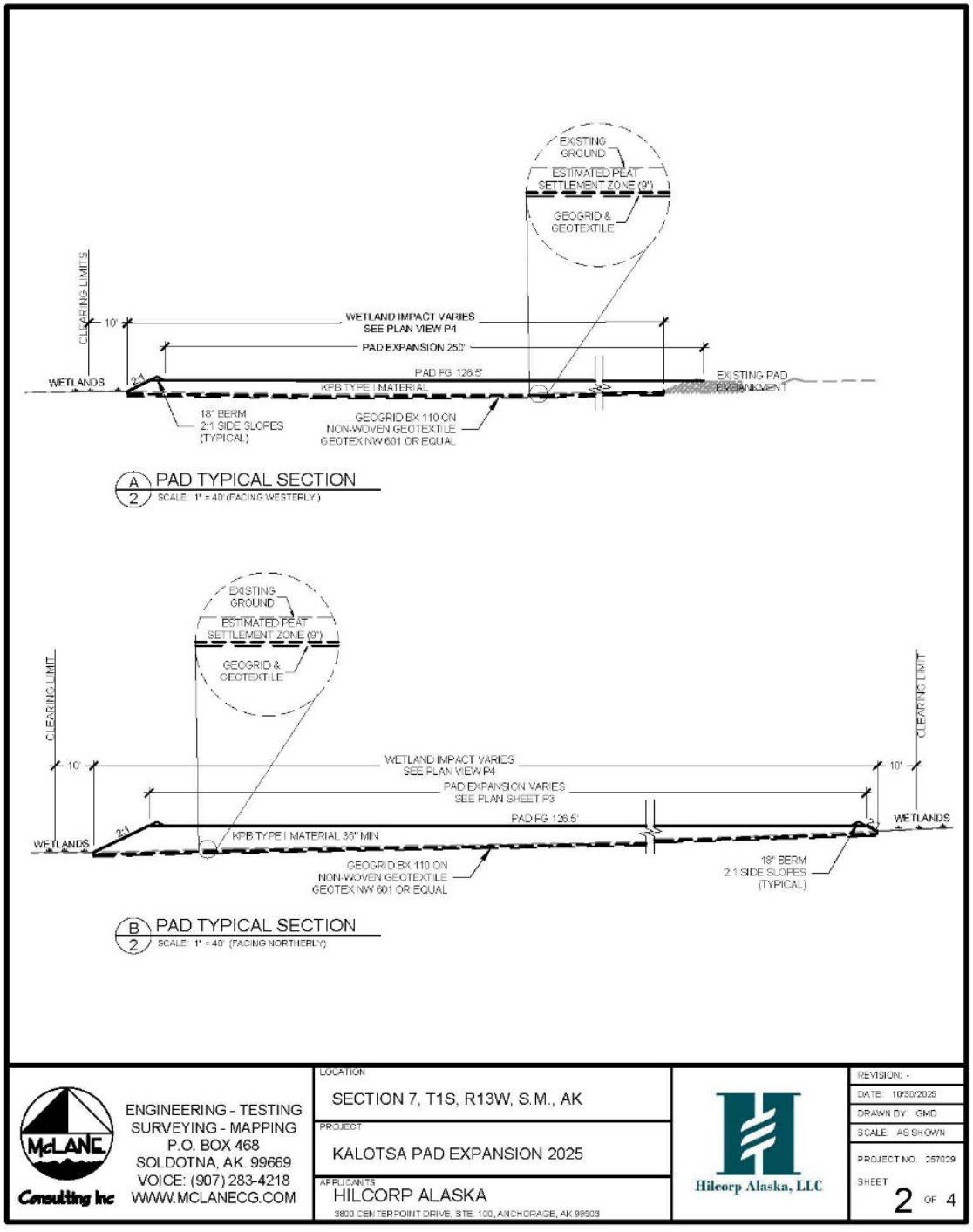
## Figure 1: Kalotsa Site Pad Expansion Vicinity Map



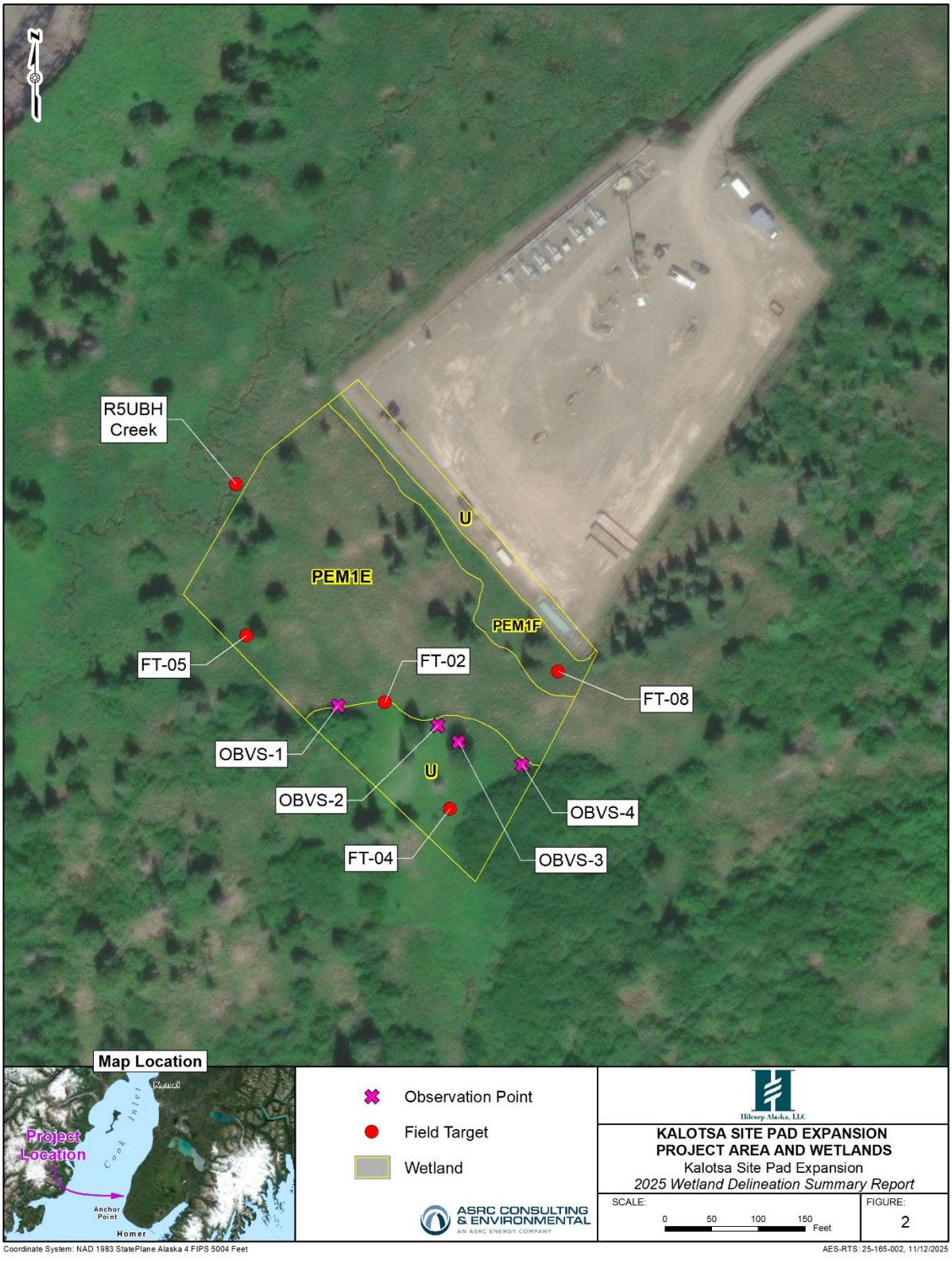
## Figure 2: Kalotsa Site Pad Expansion Plan View



## Figure 3: Kalotsa Site Pad Expansion Cross Section



## Figure 4: Kalotsa Site Pad Expansion Wetland Overview



## Attachment C: 2025 Wetland Determination - Kalotsa Site Pad Expansion

Hilcorp Alaska, LLC

# 2025 Wetland Delineation Summary Report: Kalotsa Pad Site Expansion Kenai Peninsula, Alaska

November 2025

Prepared for

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# Acronyms and Abbreviations

| | |
|---|---|
| °C | degrees Celsius |
| °F | degrees Fahrenheit |
| ACES | ASRC Consulting & Environmental Services, LLC |
| AJD | Approved Jurisdictional Determination |
| AK NWPL | Alaska National Wetland Plant List |
| CFR | Code of Federal Regulations |
| CWA | Clean Water Act |
| EPA | U.S. Environmental Protection Agency |
| FAC | facultative |
| FACU | facultative upland |
| FACW | facultative wetland |
| Full Point | Full Data Point |
| GIS | geographic information system |
| HGM | hydrogeomorphic |
| Hilcorp | Hilcorp Alaska, LLC |
| N/A | not applicable |
| NOAA | National Oceanic and Atmospheric Administration |
| NWI | National Wetlands Inventory |
| OBL | obligate wetland |
| OBVS | Observation Point |
| OHWM | ordinary high-water mark |
| PJD | Preliminary Jurisdictional Determination |
| Study Area | Kalotsa Site Pad Expansion |
| U.S.C. | U.S. Code |
| USACE | U.S. Army Corps of Engineers |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| WOTUS | Waters of the United States |

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# 1.0 INTRODUCTION

ASRC Consulting & Environmental Services, LLC (ACES) was contracted by Hilcorp Alaska, LLC (Hilcorp) to perform a wetland delineation and evaluate the feasibility of expanding the existing Kalotsa Site gravel pad in support of natural gas development on the Kenai Peninsula in Southcentral Alaska (Appendix A, Figure 1). Throughout this report, the surveyed area is referred to as the Study Area, although the overall project is titled the Kalotsa Site Pad Expansion.

Waters of the United States (WOTUS) include jurisdictional wetlands, deepwater habitats, and rivers and streams. For the purposes of this report, and because of their functional differences, wetlands are discussed separately from other WOTUS features (i.e., ponds, rivers, and streams).

The U.S. Army Corps of Engineers (USACE) defines wetlands as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (USACE 1987).

The USACE asserts its authority over wetlands at the outermost limit depicted on a delineation as the wetland–upland boundary. The USACE jurisdiction over other non-tidal WOTUS extends to areas below the ordinary high-water mark (OHWM), in the absence of adjacent wetlands. When adjacent wetlands are present, jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. According to USACE Regulatory Guidance Letter 05-05 (USACE 2005), the term "ordinary high-water mark" is defined as follows:

> The term *ordinary high-water mark* means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

## 1.1 Project Description

This wetland delineation report was prepared to assist Hilcorp in obtaining either an Approved Jurisdictional Determination (AJD) or Preliminary Jurisdictional Determination (PJD) for the Study Area, which is subject to jurisdiction by the USACE under authority granted by Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code [U.S.C.] 403).

Publicly available aerial photography and topographic data were used to conduct an initial mapping of the Study Area. An ACES wetland scientist collected vegetation, soils, and hydrologic information relevant to determining the presence and boundaries of potentially jurisdictional wetlands and other

WOTUS within the Study Area. The existence and location of wetlands and other WOTUS were determined using the methods described in Section 2.0 of this report.

## 1.2 Project Location

The project is located in Southcentral Alaska, along the west side of the Kenai Peninsula, approximately 5 miles from the census-designated place of Ninilchik. The Study Area can be found on the U.S. Geological Survey (USGS) Kenai A-5 Quadrangle Map (scale 1:63,360).

Data points were collected at four locations across the Study Area, along with five observation points. Specific locations are detailed in Table 1-1. Figures 1 and 2 in Appendix A show the Study Area in relation to existing infrastructure.

**Table 1-1 Project Location**

| PID | LAT (NAD83) | LONG (NAD83) | Section | MTRS | Description |
|---|---|---|---|---|---|
| FT-02 | 60.102416 N | −151.593650 W | 7 | S001S013W07 | SEC 07, T01S, R13W, SM |
| FT-04 | 60.102107 N | −151.593254 W | 7 | S001S013W07 | SEC 07, T01S, R13W, SM |
| FT-05 | 60.102600 N | −151.594472 W | 7 | S001S013W07 | SEC 07, T01S, R13W, SM |
| FT-08 | 60.102546 N | −151.592626 W | 7 | S001S013W07 | SEC 07, T01S, R13W, SM |
| OBVS-1 | 60.102398 N | −151.593924 W | 7 | S001S013W07 | SEC 07, T01S, R13W, SM |
| OBVS-2 | 60.102348 N | −151.593336 W | 7 | S001S013W07 | SEC 07, T01S, R13W, SM |
| OBVS-3 | 60.102315 N | −151.593221 W | 7 | S001S013W07 | SEC 07, T01S, R13W, SM |
| OBVS-4 | 60.102245 N | −151.592831 W | 7 | S001S013W07 | SEC 07, T01S, R13W, SM |
| Creek | 60.103051 N | −151.594541 W | 7 | S001S013W07 | SEC 07, T01S, R13W, SM |

Key:
MTRS = Meridian, Township, Range, Section
NAD 83 = North American Datum of 1983
OBVS =– Observation (used for point identification in field data)
PID = Point Identification
R13W = Range 13 West
SEC = Section
SM = Seward Meridian
T01S = Township 01 South

## 1.3 Study Area Characteristics

The Study Area totals 2.78 acres (1.13 hectares) and is dominated by open grasslands and pockets of deciduous and coniferous trees. Plant species identified during field sampling – along with their common names and wetland indicator status (Lichvar 2012) – are provided in Table 1-2.

The Kenai Peninsula, Alaska, receives an average of 2.56 inches (6.50 centimeters) of precipitation annually, with average high and low temperatures of 45 degrees Fahrenheit (°F) (7.2 degrees Celsius [°C]) and 30 °F (−1.1 °C), respectively, during the month of October, when the field delineation was conducted (National Oceanic and Atmospheric Administration [NOAA] 2025). See Study Area photographs in Appendix B for additional details.

**Table 1-2 Vegetation in Study Area**

| Scientific Name | Indicator |
|---|---|
| *Alnus rubra* | FAC |
| *Athyrium filix-femina* [1] | FAC |
| *Betula kenaica* [2] | FAC |
| *Calamagrostis canadensis* | FAC |
| *Geranium erianthum* | FACU |
| *Heracleum maximum* | FACU |
| *Picea marina* | FACW |
| *Ribes triste* | FAC |
| *Sanguisorba canadensis* | FACW |
| *Taraxacum officinale* | FACU |
| *Urtica dioica* | FACU |
| *Viola langsdorfii* | FAC |

Notes:

[1] Listed as *Athyrium filix-femina* based on U.S. Department of Agriculture data. Alaska National Wetland Plant List (AK NWPL) has two varieties listed, *Athyrium americanum and Athyrium cyclosorum*. All are facultative.

[2] Typically, this vegetation indicator status is FACU but the population observed at this site showed morphological characteristics for adaptation to wetter than normal conditions. This creates a problematic vegetation condition and changes the indicator to FAC.

Key:

FAC - Facultative; species equally likely to occur in wetlands and non-wetlands.

FACU - Facultative Upland; species usually occurs in non-wetlands.

FACW - Facultative Wetlands; species usually occurs in wetlands.

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# 2.0 METHODS

ACES conducted this project in accordance with the USACE Wetland Delineation Manual (USACE 1987), the Regional Supplement to the USACE *Wetland Delineation Manual: Alaska Region* (USACE 2007), and the 2018 National Wetlands Plant List for Alaska (USACE 2022). The delineation process included the following tasks:

- Preliminary data gathering and analysis
- Field investigation
- Wetlands classification
- Post-field data review
- Final mapping

## 2.1 Preliminary Data Gathering and Analysis

Information gathered during the preliminary review was used to develop an initial sampling plan for the field investigation and to map potential habitat types within the Study Area. The data were used to generate preliminary maps and to estimate the number and approximate locations of data points. ACES referenced the following data sources as the basis for fieldwork planning:

- Aerial photography
- Proprietary geographic information system (GIS) mapping collected by Hilcorp
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps (USFWS 2025), digital datasets, and hardcopy maps
- USGS Digital Raster Graphics (i.e., topographic maps)
- Alaska National Wetland Plant List (AK NWPL) (USACE 2022)

## 2.2 Field Investigation

Field investigation of the Study Area was conducted on October 8, 2025, by ACES Environmental Scientist Abby Bell. A pedestrian survey was completed across the Study Area, and data were collected at predetermined field targets that represented each potential habitat type within the Study Area. Data collection occurred at least once per vegetative or habitat community type. Sampling points were based on the vegetation communities observed on aerial photographs and from ground-truthing of the Study Area. For each vegetation community observed, sampling points were chosen based on the total area of that community in relation to other communities. Photographs were taken at each sampling point to document the vegetation, soils, hydrology, and general site characteristics (Appendix B).

At each Full Data Point (Full Point), a USACE routine wetlands delineation Field Determination Form was completed to document observed vegetation, soil, and hydrology characteristics (Appendix B). Percent aerial cover of each plant species within a 50-foot (15-meter) radius of each field target was estimated, and the type of vegetation stratum (tree, shrub, and herbaceous) layer for each species was recorded.

Observation Points (OBVSs) were completed within and outside of the predetermined Study Area, specifically to mark where a clear change in vegetation, hydrology, or soils occurred during the pedestrian survey. General site conditions were documented, and photographs were taken at the site, though not at the same level of detail as a Full Point. Table 2-1 summarizes the data points sampled by ACES in 2025.

**Table 2-1 Sampling Point Summary**

| Sample Point | Full Point? | NWI Class |
|---|---|---|
| FT-02 | Yes | PEM1E |
| FT-04 | Yes | UPL |
| FT-05 | Yes | PEM1E |
| FT-08 | Yes | PEM1F |
| OBVS-1 | No | UPL |
| OBVS-2 | No | UPL |
| OBVS-3 | No | UPL |
| OBVS-4 | No | UPL |
| Creek | No | R5UBH |

Key:
NWI = National Wetlands Inventory
OBVS = Observation Point
PEM1E = Palustrine emergent, persistent, seasonally flooded/saturated
PEM1F = Palustrine emergent, persistent, semipermanently flooded
PSS1/EM1E = Palustrine scrub–shrub, broad-leaved deciduous/Palustrine emergent, persistent, seasonally flooded/saturated
PSS4/1B = Palustrine scrub–shrub, needle-leaved evergreen/Broad-leaved deciduous, saturated
R5UBH = Riverine, unconsolidated bottom, permanently flooded
UPL = Upland

Field determination of wetlands was performed according to the three-parameter approach using vegetation, soils, and hydrologic characteristics, as described in the USACE Wetland Delineation Manuals (USACE 1987, 2007). No data points were located in areas considered atypical or problem areas, or in deep-water or stream habitat, so field indicators of hydrophytic vegetation, hydric soils, and wetland hydrology were required for an area to be defined as a wetland under current approved methods.

### 2.2.1 Hydrophytic Vegetation

Hydrophytic vegetation consists of macrophytes that have adapted to life where the frequency and duration of inundation or soil saturation determine the plant species present. At each Full Point, plant species were identified using the following reference materials:

- *Wetland Sedges of Alaska* (Tande and Lipkin 2003)
- *Field Guide to Alaskan Wildflowers* (Pratt 1989)
- *Alaska Trees and Shrubs*, Second Edition (Viereck and Little 2007)

Percent cover of vegetation was estimated within a defined radius of the soil pit at each Full Point. Given the size of the Study Area, a 50-foot (15-meter) radius was used to capture vegetation across the plot. Each plant species was assigned an indicator status as designated by the USACE in the 2022 AK NWPL. Plant species are considered hydrophytic if their USFWS indicator status is obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC).

The vegetation community was evaluated using the Dominance Test Indicator and the Prevalence Index Indicator (USACE 2007). The dominance test is more appropriate for plant communities with only a few dominant individuals, whereas the prevalence test is more comprehensive because it accounts for all species present in the plot. Vegetation is considered hydrophytic if either test is satisfied, unless a disturbed or problematic wetland situation exists.

### 2.2.2 Hydric Soils

Hydric soils are generally saturated, flooded, or ponded long enough during the growing season to become anaerobic in the upper soil horizon. Soils were sampled at all Full Points and evaluated for hydric soil indicators. Soil pits were excavated with a shovel to a depth of at least 20 inches (50.8 centimeters) below ground surface. Soil matrix color and features were identified according to *Munsell Soil Color Charts* (2000). The soil profile was described on USACE field determination forms.

### 2.2.3 Hydrology

Direct observations of wetland hydrology are often limited during certain times of the growing season, but typical primary indicators include surface water, a high-water table or saturation, watermarks, sediment deposits, and drift deposits. Typical secondary indicators include drainage patterns, oxidized or reduced root channels, stunted or stressed plant cover, water-stained leaves or sediment deposits, and the presence of reduced iron. Field indicators of hydrology are considered satisfied if one primary or two secondary indicators are observed. Certain indicators present throughout the year confirm the occurrence of saturation or inundation for sufficient durations that satisfy USACE wetland delineation criteria (USACE 1987; 2007).

## 2.3 Wetlands Classification

Wetland areas were classified at the class level in accordance with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Hydrologic modifiers were added to each wetland class. The nomenclature follows the NWI classification system.

## 2.4 Post-Field Data Review/Final Mapping

Upon completion of field data collection, the determination forms, photographs, and field notes were evaluated for accuracy and completeness. The data were used to update preliminary wetland mapping with new information. These updated data were incorporated into the geodatabase containing all project wetland data. Final wetland mapping was completed using ArcGIS software and a georeferenced aerial photograph as a base map to digitally map wetlands and habitat boundaries and to calculate wetland and upland areas.

# 3.0 RESULTS

## 3.1 Study Area Results

The Study Area totaled 2.78 acres (1.13 hectares), with a mix of wetlands and uplands found within its boundaries (Table 3-1). A riverine system located outside of the Study Area is included in Table 3-1 to provide a broader understanding of the local ecosystem, but acreage was not calculated, as this system was not encountered within the proposed expansion area. Observation Points 1–4 mark the boundary between Study Area wetlands and uplands. The data sheets are included in Appendix B.

**Table 3-1 Wetlands and Non-Jurisdictional Uplands by Acreage for the Kalotsa Site Pad Expansion**

| Type | Acres | Hydrogeomorphic (HGM) Class | Associated Data Points | Associated Observation Points |
|---|---|---|---|---|
| **Wetlands** | | | | |
| PEM1E | 1.75 | Slope | FT-02<br>FT-05 | N/A |
| PEM1F | 0.27 | Slope | FT-08 | N/A |
| R5UBH | N/A | Riverine | N/A | R5UBH Creek |
| **Uplands** | | | | |
| UPL | 0.76 | Upland | FT-04 | OBVS-1<br>OBVS-2<br>OBVS-3<br>OBVS-4 |

Key:
FT = Field Target
N/A = not applicable
OBVS = Observation Point
PEM1E = Palustrine emergent, persistent, seasonally flooded/saturated
PEM1F = Palustrine emergent, persistent, semi-permanently flooded
R5UBH = Riverine, unknown perennial flow, unconsolidated bottom, permanently flooded
UPL = Uplands

## 3.2 Habitat Types

### 3.2.1 Wetlands

2.02 acres of the 2.78-acre Study Area were identified as palustrine wetlands. The palustrine emergent class was paired with the seasonally flooded/saturated and semi permanently flooded modifier, depending on location. Hydrophytic vegetation found within and outside the Study Area boundary included *Calamagrostis canadensis, Picea mariana, Alnus rubra,* and *Athyrium filix-femina*.

Several inches of standing water, a high-water table, hummock-dominated landform, iron deposits, and water-stained leaves were all encountered at various points throughout the Study Area. In areas where there was no standing water, the ground was saturated to the surface, so that when pressure was applied to the ground or a test pit was excavated, water would well to the surface.

The hydric soils sampled in the Study Area were characterized by a thick fibric layer, dark value and chroma, saturated within 12 inches of the ground surface, and a silty loam texture. This soil readily formed a ball but would not ribbon.

The nonhydric soils found in the uplands of the Study Area had a thinner vegetative layer, a much brighter chroma, and would only form a ball when dampened. During the test pit excavation, it was noted that these soils did not hold a solid shape like the soils at other sampling sites did.

### 3.2.2 Other Waters of the United States

No other WOTUS were found in the Study Area, but there is a R5UBH riverine system just to the east of the Study Area that was previously mapped in the NWI. Although not part of the Study Area, site characterization data was collected. See Appendix B for more details.

### 3.2.3 Uplands

Uplands totaled 0.76 acres (0.31 hectares). These uplands were located in the southwest corner of the Study Area and at a slightly higher elevation than the nearby wetland habitats. Dominant vegetation included *Heracleum maximim* and *Alnus rubra* . It should be noted that vegetation composition in this habitat contained nondominant FAC and FACW species; however, these areas lacked sufficient field indicators of hydrology or hydric soils and are therefore not considered wetlands.

The quantity of wetlands, other WOTUS, and non-jurisdictional uplands for the Study Area are presented in Table 3-2.

**Table 3-2 Wetlands, Other WOTUS, and Non-Jurisdictional Uplands in the Study Area**

| Type | Amount in Study Area (acres) |
|---|---|
| Wetlands | 2.02 |
| Other WOTUS | N/A |
| Uplands | 0.76 |

Key: N/A = Not applicable
WOTUS = Waters of the United States

## 3.3 Previous Wetland Determinations

ACES was not provided with any previous wetland determinations other than those available through USFWS NWI mapping.

## 3.4 Preliminary Jurisdictional Determination

ACES did not complete jurisdictional determination forms, as this is the responsibility of the USACE. Referring to the 2023 *Sackett* decision and the federal definition of a WOTUS in 40 Code of Federal Regulations (CFR) 120.2(a), wetlands fall under the jurisdiction of the USACE when they are adjacent to a WOTUS or other traditionally navigable water – among other factors.

Both the *Rapanos v. United States,* 547 U.S. at 742 (2006), and *Sackett v. Environmental Protection Agency*, 598 U.S. 651 (2023) decisions define adjacent wetlands as those with a continuous surface connection to a WOTUS, "making it difficult to distinguish where the water ends and the wetland begins" (*Sackett* 2023). A March 12, 2025, memorandum to the field, issued jointly by the U.S. Environmental Protection Agency (EPA) and the USACE, further clarified the definition of a continuous surface connection, stating that WOTUS includes only "those adjacent wetlands that have a continuous surface connection because they directly abut the [requisite jurisdictional water]." Wetlands that are far removed from and not directly abut a covered water do not meet the continuous surface connection standard (EPA and USACE 2025).

WOTUS does not include subsurface waters; therefore, for a wetland to qualify as jurisdictional, the hydrologic connection must occur via surface water. Under the *Sackett* decision, we understand that surface water connection must be continuous and present through most of the growing season.[1]

[1] See *Sackett* (2023), page 21, which states: "In *Rapanos*, the plurality spelled out clearly when adjacent wetlands are part of covered waters. It explained that "waters" may fairly be read to include only those wetlands that are 'as a practical matter indistinguishable from waters of the United States,' such that it is 'difficult to determine where the 'water' ends and the 'wetland' begins.' 547 U.S., at 742, 755 (emphasis

West of and outside of the Study Area is an unnamed, relatively permanent stream classified in NWI as R5UBH, which flows directly into Cook Inlet, a territorial sea (a)(1)(ii). Due to this direct connection to Cook Inlet, this R5UBH system is considered a WOTUS (a)(3) and is therefore under the jurisdiction of the USACE.

The Study Area contains palustrine wetlands with emergent vegetation and various hydrologic modifiers. Due to the semi-permanently flooded nature of an environment found within the Study Area, it is believed that there is a direct surface water connection to the above-mentioned jurisdictional WOTUS present through most of the growing season, therefore, these wetlands are also under the jurisdiction of the USACE.

Uplands in the Study Area are not considered to be jurisdictional and do not require CWA permits for placement of fill. It is the responsibility of the USACE to make the final determination as to whether a resource is jurisdictional under Section 404 of the CWA. Should Hilcorp decide not to request an AJD from the USACE for this they can assume jurisdiction is present and request authorization to place fill through a CWA individual permit.

deleted). That occurs when wetlands have 'a continuous surface connection to bodies that are 'waters of the United States' in their own right, so that there is no clear demarcation between 'waters' and wetlands."

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# Appendix A
# Figures

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**Figure 1 Kalotsa Site Pad Expansion Vicinity Map**

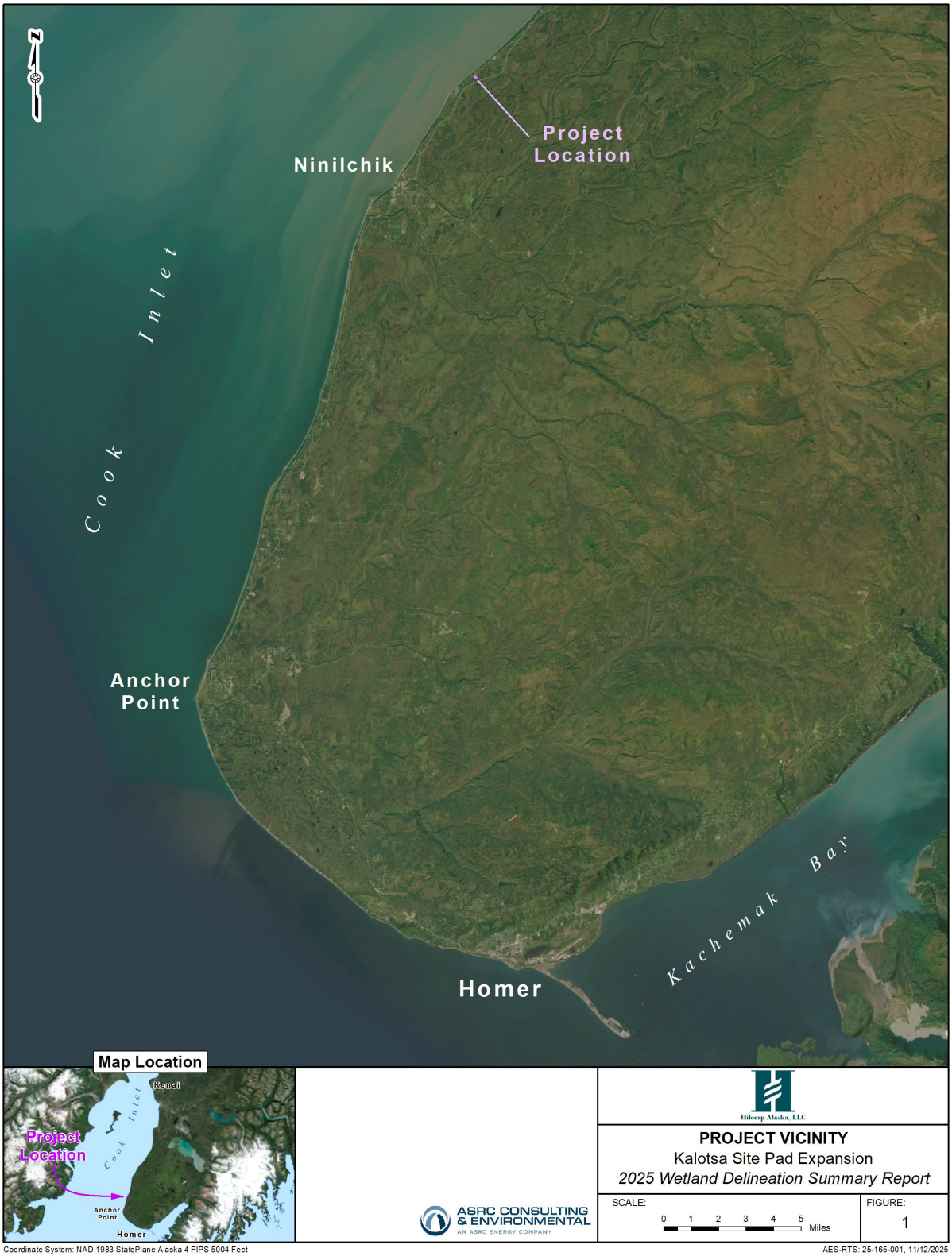
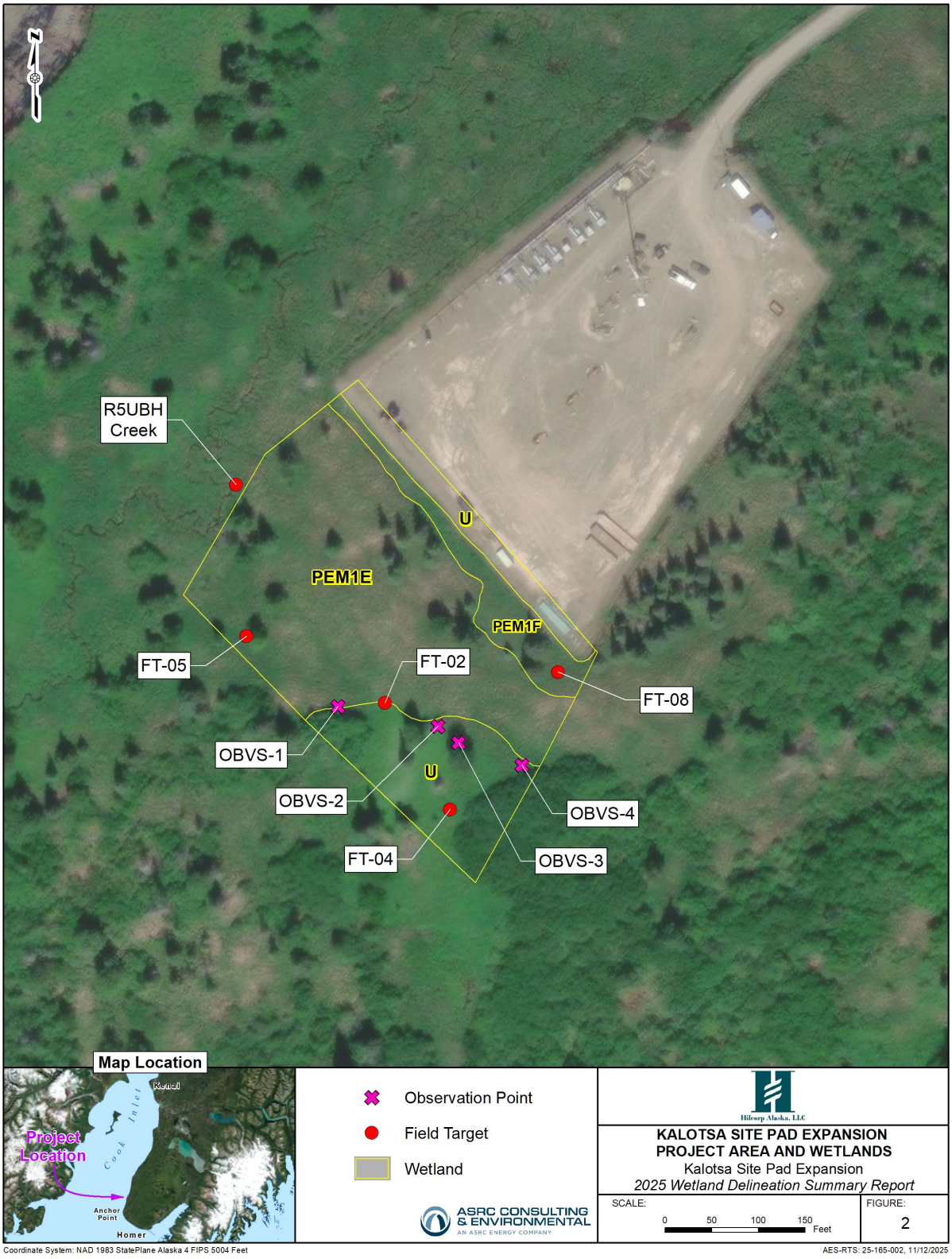


**Figure 2 Kalotsa Site Pad Expansion Project Area and Wetlands**



# Appendix B
# Wetland Determination Data Forms and Site Photographs

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**U.S. Army Corps of Engineers**
**WETLAND DETERMINATION DATA SHEET – Alaska Region**
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

*OMB Control #: 0710-0024, Exp: 9/30/2027*
*Requirement Control Symbol EXEMPT:*
*(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Kalotsa Site Pad Expansion Borough/City: Kenai, Alaska Sampling Date: 10/08/2025
Applicant/Owner: Hilcorp Alaska, LLC Sampling Point: FT-02
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): Hummocks
Local relief (concave, convex, none): None Slope (%): 1%
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.102416 Long: -151.593650 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: PEM1E
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____
Are Vegetation X, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ |
| Hydric Soil Present? | Yes X | No ____ |
| Wetland Hydrology Present? | Yes X | No ____ |

**Is the Sampled Area within a Wetland?** Yes X No ____

Remarks:
Test pit dug at the edge of a Cal-can field and cow parnsip patch, downhill from existing pad and FT-04.

**VEGETATION – Use scientific names of plants.**

| Tree Stratum | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Picea mariana* | 20 | Yes | FACW |
| 2. *Betula kenaica* | 5 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| | 25 =Total Cover | | |
| 50% of total cover: 13 | 20% of total cover: 5 | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Alnus rubra* | 20 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 20 =Total Cover | | |
| 50% of total cover: 10 | 20% of total cover: 4 | | |
| **Herb Stratum** | | | |
| 1. *Calamagrostis canadensis* | 50 | Yes | FAC |
| 2. *Heracleum maximum* | 50 | Yes | FACU |
| 3. *Ribes triste* | 5 | No | FAC |
| 4. *Geranium erianthum* | 5 | No | FACU |
| 5. *Sanguisorba canadensis* | 5 | No | FACW |
| 6. *Athyrium filix-femina* | 5 | No | FAC |
| 7. *Taraxacum officinale* | 5 | No | FACU |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 125 =Total Cover | | |
| 50% of total cover: 63 | 20% of total cover: 25 | | |

Plot Size (radius, or length x width) 50 ft x 50 ft % Bare Ground 0
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 25 | x 2 = | 50 |
| FAC species | 85 | x 3 = | 255 |
| FACU species | 60 | x 4 = | 240 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 170 (A) | | 545 (B) |

Prevalence Index = B/A = 3.21

**Hydrophytic Vegetation Indicators:**
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks:
Clear line of alder and cow parsnip acting like dividing line between obviously wet and drier lands. Very distinct change in vegetation on either side of

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## SOIL

Sampling Point: FT-02

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-9 | | | | | | | | Fibric organic material |
| 9-12 | 10YR 2/2 | 50 | | | | | Loamy/Clayey | Mineral layer starts |
| 12-20 | 10YR 3/3 | 100 | | | | | Loamy/Clayey | Saturated and sloppy |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol or Histel (A1)
- _x_ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)
- ___ Iron Monosulfide (A18)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Depleted Below Dark Surface (A11)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)

- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: None

Depth (inches): 20

**Hydric Soil Present?** Yes X No ___

Remarks:

First top inch of plug is full plant matter, top 9 inches of plug are mix of soil and plant material and create compacted plug. Mineral layer starts at 9 inches below ground surface. There is an obvious soil color change at the 12-inch mark of plug when soils are fully inundated with water. Defined in the field as "sloppy" and "muddy". All soils will ball but not ribbon. Soils wet throughout plug. Soil texture shifts from a loam dominant soil to a siltier texture as test pit depth is reached.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- _x_ Surface Water (A1)
- _x_ High Water Table (A2)
- _x_ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- _X_ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes X | No ___ | Depth (inches): 0 |
| Water Table Present? | Yes X | No ___ | Depth (inches): 13 |
| Saturation Present? (includes capillary fringe) | Yes X | No ___ | Depth (inches): 12 |

**Wetland Hydrology Present?** Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

Standing water 12 feet from test pit. Soils fully innundated with water in test pit 12 inches below ground surface. Water table was initally encountered at 13 inches beow ground surface, but had risen to 10 inches below ground surface by the end of the site analysis

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**Field Target-02 Photographs**

| Field Target-02 Photos | |
|---|---|
|  |  |
|  |  |

From top to bottom, left to right: Initial water level in test pit, soil plug showing saturation and texture, Water levels in test pit at the end of site analysis. Note how the water level rose from 13 inches below ground surface to 10 inches below ground surface.

**Field Target-02 Photographs**

| Field Target-02 Photos | |
|---|---|
|  |  |
|  |  |

At Edge of PEM1E wetland and Uplands. Cardinal Directions from top to bottom, left to right: Facing northwest toward Pad, facing northeast toward Pad, facing south, and facing west.

**U.S. Army Corps of Engineers**
**WETLAND DETERMINATION DATA SHEET – Alaska Region**
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

*OMB Control #: 0710-0024, Exp: 9/30/2027*
*Requirement Control Symbol EXEMPT:*
*(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Kalotsa Site Pad Expansion Borough/City: Kenai, Alaska Sampling Date: 10/08/2025
Applicant/Owner: Hilcorp Alaska, LLC Sampling Point: FT-04
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): Minor Hummocks
Local relief (concave, convex, none): None Slope (%): 1%
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.102107 Long:-151.593254 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: UPL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes ____ No X
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

**Is the Sampled Area within a Wetland?** Yes ____ No X

Remarks:
Slight uphill from FT-05 in cow parnsip and alder clearing. Minor hummocking but very reduced compared to the rest of the project area.

**VEGETATION – Use scientific names of plants.**

| Tree Stratum | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Alnus rubra* | 50 | Yes | FAC |
| 2. *Picea mariana* | 10 | No | FACW |
| 3. *Betula kenaica* | 1 | No | FACU |
| 4. | | | |
| | 61 | =Total Cover | |
| 50% of total cover: 31 | | 20% of total cover: 13 | |
| Sapling/Shrub Stratum | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | | =Total Cover | |
| 50% of total cover: | | 20% of total cover: | |
| Herb Stratum | | | |
| 1. *Heracleum maximum* | 95 | Yes | FACU |
| 2. *Calamagrostis canadensis* | 30 | No | FAC |
| 3. *Athyrium filix-femina* | 25 | No | FAC |
| 4. *Urtica dioica* | 10 | No | FACU |
| 5. *Taraxacum officinale* | 10 | No | FACU |
| 6. *Viola langsdorffii* | 5 | No | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 175 | =Total Cover | |
| 50% of total cover: 88 | | 20% of total cover: 35 | |

Plot Size (radius, or length x width) 50 ft x 50 ft % Bare Ground 0
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | 110 | x 3 = | 330 |
| FACU species | 116 | x 4 = | 464 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 236 (A) | | 814 (B) |

Prevalence Index = B/A = 3.45

**Hydrophytic Vegetation Indicators:**
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ____ No X

Remarks:
Very distinct change in vegetation from FT-05. 5% bryophyte coverage

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## SOIL

Sampling Point: FT-04

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-5 | | | | | | | | Fibric organic material |
| 5-5.5 | 10YR 2/1 | 50 | | | | | Loamy/Clayey | Mixed with pockets of ash |
| 5.5-20 | 10YR 4/6 | 100 | | | | | Loamy/Clayey | Field Description: Loamy sand |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)
___ Iron Monosulfide (A18)

**Indicators for Problematic Hydric Soils[3]:**

___ Depleted Below Dark Surface (A11)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)

___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

**Restrictive Layer (if observed):**
Type: None
Depth (inches): 20

**Hydric Soil Present?** Yes ___ No X

Remarks:
Soils are dry and bright below vegetative mat. Vegetative mat dark, but an even mix of soil and roots. Gets sandier in texture as full test pit depth is reached. Soils would ball but not ribbon when wet. Pockets of ash between 5 and 5.5 inches below ground surface. Did not crumble the way that soils downhill from the site did.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ___ No x Depth (inches): ___
Water Table Present? Yes ___ No x Depth (inches): ___
Saturation Present? Yes ___ No x Depth (inches): ___
(includes capillary fringe)

**Wetland Hydrology Present?** Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
N/A

Remarks:
Area drier overall compared to other sites in the project area. No water observed or other indicators of long term innundation.

**ENG FORM 6116, SEP 2024** Alaska – Version 2.0

**Field Target-04 Photographs**

| Field Target-04 Photos | |
|---|---|
|  |  |
|  |  |

From top to bottom, left to right: Test Pit Downhole, Close up Shot of Soil Plug, Soil Plug Overview, Showing Soil Texture and Clumps of Ash. Note the thinner vegetative mat and bright colors of the soil compared to the other test sites.

**Field Target-04 Photographs**

| Field Target-04 Photos | |
|---|---|
|  |  |
|  |  |

Cardinal Directions from top to bottom, left to right: facing north, facing east, facing south, and facing west.

**U.S. Army Corps of Engineers**
**WETLAND DETERMINATION DATA SHEET – Alaska Region**
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

*OMB Control #: 0710-0024, Exp: 9/30/2027*
*Requirement Control Symbol EXEMPT:*
*(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Kalotsa Site Pad Expansion Borough/City: Kenai, Alaska Sampling Date: 10/08/2025
Applicant/Owner: Hilcorp Alaska, LLC Sampling Point: FT-05
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): hummocks
Local relief (concave, convex, none): concave Slope (%): 3
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.102600 Long:-151.594472 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: PEM1E
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____
Are Vegetation X, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____
**Is the Sampled Area within a Wetland?** **Yes** X **No** ____

Remarks:
Edge of proposed expansion area. Full vegetaion cover. Soils saturated - test pit continuously filled with water during survey.

**VEGETATION – Use scientific names of plants.**

| Tree Stratum | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Betula kenaica* | 5 | Yes | FAC |
| 2. *Picea mariana* | 3 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| | 8 =Total Cover | | |
| 50% of total cover: 4 | 20% of total cover: 2 | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Alnus rubra* | 1 | No | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 1 =Total Cover | | |
| 50% of total cover: 1 | 20% of total cover: 1 | | |
| **Herb Stratum** | | | |
| 1. *Calamagrostis canadensis* | 100 | Yes | FAC |
| 2. *Heracleum maximum* | 10 | No | FACU |
| 3. *Athyrium filix-femina* | 1 | No | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 111 =Total Cover | | |
| 50% of total cover: 56 | 20% of total cover: 23 | | |

Plot Size (radius, or length x width) 50 foot x 50 foot % Bare Ground 0
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 3 | x 2 = | 6 |
| FAC species | 107 | x 3 = | 321 |
| FACU species | 10 | x 4 = | 40 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 120 (A) | | 367 (B) |

Prevalence Index = B/A = 3.06

**Hydrophytic Vegetation Indicators:**
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** **Yes** X **No** ____

Remarks:
Cal-can averaged 6 feet tall. Vegetation data collected late in the season. Birch showing signs of adaptation to wet conditions, changing from FACU to FAC.

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## SOIL

Sampling Point: FT-05

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-11 | | | | | | | | Fibric organic material |
| 11-19 | 10YR 2/2 | 90 | | | | | Loamy/Clayey | start of mineral layer |
| 19-20 | 10YR 3/4 | 100 | | | | | Loamy/Clayey | Described as "sticky" in the field |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol or Histel (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)
- ___ Iron Monosulfide (A18)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Depleted Below Dark Surface (A11)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)

- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: None

Depth (inches): 20

**Hydric Soil Present?** Yes X No ___

Remarks:

Test pit immediately filled with 10 inches of water upon soil excavation; over the course of the site survey, water filled pit to 5 inches below ground surface. Soils would ball but not ribbon and became more silt dominate as test pit depth was reached. Soils in the field described as "silty loam"

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes x | No ___ | Depth (inches): 0 |
| Water Table Present? | Yes x | No ___ | Depth (inches): 10 |
| Saturation Present? (includes capillary fringe) | Yes x | No ___ | Depth (inches): 0 |

**Wetland Hydrology Present?** Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

3 inches of standing water found 4 feet from where the test pit was dug. Where surface water is not found, ground is very squishy. Fully innundated soils at 10 inches below ground surface. Saturation believed to be to the surface as seen by glistening sidewalls.

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**Field Target-05 Photographs**

| Field Target-05 Photos | |
|---|---|
|  |  |
|  |  |

From top to bottom, left to right: test pit overview and initial water level, close up shot of test pit , soil plug overview, and close up shot of soil plug.

**Field Target-05 Photographs**

| Field Target-05 Photos | |
|---|---|
|  |  |
|  | |

From top to bottom, left to right: showing the soil texture, water level in test pit at end of site analysis, and standing water measurement approximately 5 feet from the excavation site.

**U.S. Army Corps of Engineers**
**WETLAND DETERMINATION DATA SHEET – Alaska Region**
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

*OMB Control #: 0710-0024, Exp: 9/30/2027*
*Requirement Control Symbol EXEMPT:*
*(Authority: AR 335-15, paragraph 5-2a)*

Project/Site: Kalotsa Site Pad Expansion Borough/City: Kenai, Alaska Sampling Date: 10/08/2025
Applicant/Owner: Hilcorp Alaska, LLC Sampling Point: FT-08
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): hummocks
Local relief (concave, convex, none): None Slope (%): 1
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.102546 Long:-151.592626 Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: PEM1F
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

**Is the Sampled Area within a Wetland?** Yes X No ____

Remarks:
~20 feet off the exisitng pad. Visible surface water from pad edge to sampling point.

**VEGETATION – Use scientific names of plants.**

| Tree Stratum | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Picea mariana* | 10 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10 =Total Cover | | |
| 50% of total cover: 5 | 20% of total cover: 2 | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Alnus rubra* | 3 | No | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| | 3 =Total Cover | | |
| 50% of total cover: 2 | 20% of total cover: 1 | | |
| **Herb Stratum** | | | |
| 1. *Calamagrostis canadensis* | 100 | Yes | FAC |
| 2. *Heracleum maximum* | 5 | No | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 105 =Total Cover | | |
| 50% of total cover: 53 | 20% of total cover: 21 | | |

Plot Size (radius, or length x width) 50 feet x 50 feet % Bare Ground 0
% Cover of Wetland Bryophytes ____ Total Cover of Bryophytes ____
(Where applicable)

**Dominance Test worksheet:**
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | 103 | x 3 = | 309 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 118 (A) | | 349 (B) |

Prevalence Index = B/A = 2.96

**Hydrophytic Vegetation Indicators:**
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks:
Alnus rubra placed in the sapling/shrub stratum of this form since all plants found were at most 1 meter tall, with most sub-meter in height. Cal-can averaging 5 feet tall. 10% bryophyte coverage

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## SOIL

Sampling Point: FT-08

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-12 | | | | | | | | fibric organic plant matter |
| 12-20 | 10YR 2/2 | 100 | | | | | Loamy/Clayey | No plant matter. Fully innundated soils. |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol or Histel (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)
- ___ Iron Monosulfide (A18)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Depleted Below Dark Surface (A11)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)

- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: None

Depth (inches): 20

**Hydric Soil Present?** Yes X No ___

Remarks:

Top 3 inches of plug was full plant matter, and fibric organic materials found in top 12 inches of plug. Color was uniform throughout. Soils were wet throughout plug, including to the surface. Soils described in the field as "silty loam". Soils without plant matter described as sloppy and muddy in the field.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- X Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes X | No ___ | Depth (inches): 0 |
| Water Table Present? | Yes X | No ___ | Depth (inches): 0 |
| Saturation Present? (includes capillary fringe) | Yes X | No ___ | Depth (inches): 0 |

**Wetland Hydrology Present?** Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

Standing water at test pit and surrounding area, iron sheen observed on water surface that shattered when disturbed. Test pit full of water during entire site analysis. Water stained leaves observed at the site.

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**Field Target-08 Photographs**

| Field Target-08 Photos | |
|---|---|
|  |  |
|  |  |

From top to bottom, left to right: water level in pit at initial excavation, soil plug overview, close up of soil plug showing fibric matter, and water level in test pit at the end of site analysis.

**Field Target-08 Photographs**

| Field Target-08 Photos | |
|---|---|
|  |  |
|  |  |

From top to bottom, left to right: Iron sheen observed on surface water, water staining on leaves, standing water observed at the test pit site, view from test pit site – looking south-southwest into the project area. Note the vegetation change from *C. canadensis* to *H. maximum* at the back of the photograph.

**R5UBH Creek Photographs**

| R5UBH Creek Photos | |
|---|---|
|  |  |
|  |  |

From top to bottom, left to right: Overview picture of the R5UBH creek to the east of the Study Area, the creek depth, the creek width overview picture, and a close up shot of the creek width.

**Observation Point-1 Photographs**

| OBVS-1 Photos | |
|---|---|
|  |  |
|  | |

From top to bottom, left to right: East facing observed break in vegetation type from *C. canadensis* to *A. rubra*, south facing observed break in vegetation type from *C. canadensis* to *A. rubra*, fallen *A. rubra* leaves.

**Observation Point-2 Photographs**

| OBVS-2 Photos | |
|---|---|
|  |  |
|  |  |

Cardinal Directions from top to bottom, left to right: Facing North, Facing East, Facing South, Facing West. Note the dominant vegetation changes from *C. canadensis* to *A. rubra*.

**Observation Point-3 Photographs**

| OBVS-3 Photos | |
|---|---|
|  |  |
|  |  |

Cardinal Directions from top to bottom, left to right: Facing North, Facing East, Facing South, Facing West

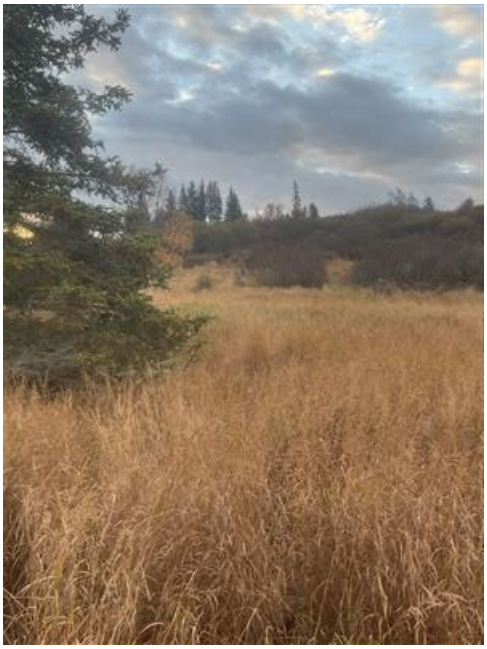
**Observation Point-4 Photographs**

| OBVS-4 Photos | |
|---|---|
|  |  |
|  |  |

Cardinal Directions from top to bottom, left to right: Facing North towards the pad, Facing East, Facing South, Facing West

## Additional Study Area Photographs

**Additional Study Area Photos – Northeast Edge of Pad – On Berm**



From top to bottom, left to right: Facing northeast into pad, Facing northwest along pad edge, Facing southeast into Study Area, Facing southwest into Study Area.

**Additional Study Area Photographs**

**Additional Study Area Photos – Northern Corner of Pad Edge and Study Area**

From top to bottom, left to right: Facing north away from the Study Area, facing south along existing pad edge, facing east into the Study Area, facing west along Study Area border

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# Electronic Distribution

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